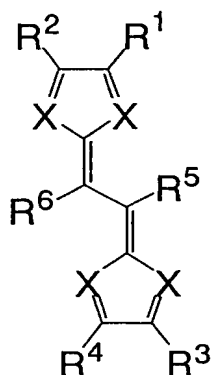


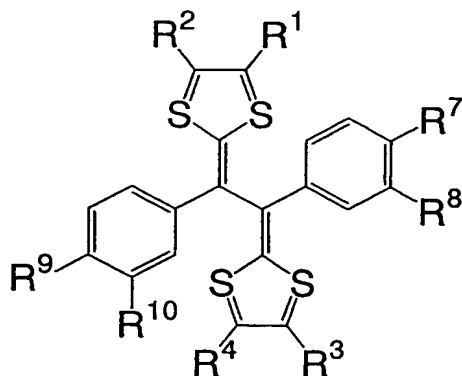
# CLAIMS

1. An electrochemical device, comprising a positive electrode, a negative electrode and an electrolyte, wherein at least one of said positive electrode and said negative electrode includes a compound having a structure represented by the general formula (1):



where X is a sulfur atom, a nitrogen atom or an oxygen atom; each of R<sup>1</sup> to R<sup>4</sup> is independently a linear or cyclic aliphatic group, a hydrogen atom, a hydroxyl group, a cyano group, an amino group, a nitro group or a nitroso group; each of R<sup>5</sup> and R<sup>6</sup> is independently a linear or cyclic aliphatic group; said aliphatic group includes at least one selected from the group consisting of an oxygen atom, a nitrogen atom, a sulfur atom, a silicon atom, a phosphorus atom, a boron atom and a halogen atom.

2. The electrochemical device in accordance with claim 1, wherein said compound is represented by the general formula (2):



where each of R<sup>1</sup> to R<sup>4</sup> and R<sup>7</sup> to R<sup>10</sup> is independently a linear or cyclic aliphatic group, a hydrogen atom, a hydroxyl group, a cyano group, an amino group, a nitro group or a nitroso group; said aliphatic group includes at least one selected from the group consisting of an oxygen atom, a nitrogen atom, a sulfur atom, a silicon atom, a phosphorus atom, a boron atom and a halogen atom.

3. The electrochemical device in accordance with claim 1, wherein said compound is a polymer compound having more than one structure represented by the general formula (1).

4. The electrochemical device in accordance with claim 1, wherein said electrolyte comprises a solvent, and an anion and a cation that diffuse in said solvent, and said compound is capable of forming a coordinate bond with said cation through an oxidation-reduction reaction.

5. The electrochemical device in accordance with claim 4, wherein said cation is a lithium ion.

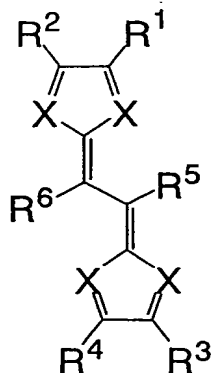
6. The electrochemical device in accordance with claim 1, wherein said electrolyte comprises a solvent, and an

anion and a cation that diffuse in said solvent, and said compound is capable of forming a coordinate bond with said anion through an oxidation-reduction reaction.

7. The electrochemical device in accordance with claim 1, wherein said positive electrode includes said compound as a positive electrode active material, and said negative electrode includes a carbon material as a negative electrode active material.

8. The electrochemical device in accordance with claim 1, wherein said positive electrode includes said compound as a positive electrode active material, and said negative electrode includes, as a negative electrode active material, at least one selected from the group consisting of a lithium metal, a lithium-containing composite nitride and a lithium-containing composite titanium oxide.

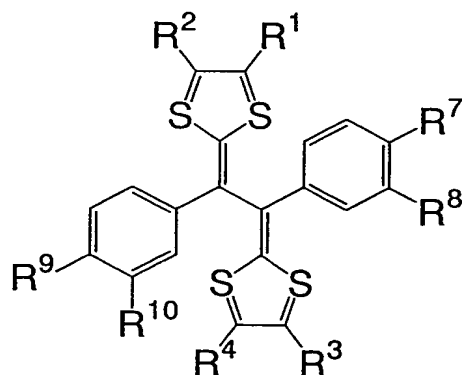
9. An electrode active material for an electrochemical device, comprising a compound having a structure represented by the general formula (1):



where X is a sulfur atom, a nitrogen atom or an oxygen atom;

each of  $R^1$  to  $R^4$  is independently a linear or cyclic aliphatic group, a hydrogen atom, a hydroxyl group, a cyano group, an amino group, a nitro group or a nitroso group; each of  $R^5$  and  $R^6$  is independently a linear or cyclic aliphatic group; said aliphatic group includes at least one selected from the group consisting of an oxygen atom, a nitrogen atom, a sulfur atom, a silicon atom, a phosphorus atom, a boron atom and a halogen atom.

10. The electrode active material for an electrochemical device in accordance with claim 9, wherein said compound is represented by the general formula (2):



where each of  $R^1$  to  $R^4$  and  $R^7$  to  $R^{10}$  is independently a linear or cyclic aliphatic group, a hydrogen atom, a hydroxyl group, a cyano group, an amino group, a nitro group or a nitroso group; said aliphatic group includes at least one selected from the group consisting of an oxygen atom, a nitrogen atom, a sulfur atom, a silicon atom, a phosphorus atom, a boron atom and a halogen atom.

11. The electrode active material for an

electrochemical device in accordance with claim 9, wherein said compound is a polymer compound having more than one structure represented by the general formula (1).

12. The electrochemical device in accordance with claim 1, wherein a carbon number of the aliphatic group is in a range of 1 to 6.

13. The electrode active material for the electrochemical device in accordance with claim 9, wherein a carbon number of the aliphatic group is in a range of 1 to 6.

14. The electrochemical device in accordance with claim 1, wherein said negative electrode includes said compound as a negative electrode active material, and said positive electrode includes a metal oxide material as a positive electrode active material.

15. The electrochemical device in accordance with claim 1, wherein, when said compound is used as an electrode active material, a conductive material is mixed into the electrode active material.

16. The electrochemical device in accordance with claim 1, wherein, when said positive electrode includes said compound as a positive electrode active material, one of the following is used as the negative electrode material of said negative electrode: a carbon material, a lithium metal, a lithium-containing composite nitride, a lithium-containing composite titanium oxide, a composite material of tin and carbon, and a composite material of tin and another metal.

17. The electrochemical device in accordance with claim 1, wherein said electrochemical device comprises one of a secondary battery, a primary battery, an electrolytic capacitor, a sensor and an electrochromic device.

18. The electrode active material for the electrochemical device in accordance with claim 9, wherein the electrochemical device comprises one of a secondary battery, a primary battery, an electrolytic capacitor, a sensor and an electrochromic device.